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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/662,159

09/12/2003

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EXAMINER

PEZZUTO, HELEN LEE

ART UNIT

PAPER NUMBER

1713

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/23/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/662,159

Applicant(s)

LOPEZ ET AL.

Examiner

Helen L. Pezzuto

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25, 36-45, 47 and 48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25, 36-45, 47-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/15/06 has been entered.

Response to Amendment

Applicant's amendment to claims 1, 18-19, 25, the cancellation of claim 46, and the addition of claims 47-48 filed on 12/15/06 are acknowledged. Currently, claims 1-25, 36-45, 47-48 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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3. Claims 1-25, 36-45, and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined disclosures of Vollmer et al. (US-747) and Heying (US-701) or Walker (US-816) or Alexander (US-940).

US 5,785,747 to Vollmer et al. discloses a viscosifying aqueous brine composition suitably used as wellbore treatment fluid in drilling operations, including fluid loss control fluids (col. 1, lines 10-67). Prior art brine composition is taught to have enhanced rheological properties, especially at elevated temperatures and over extended periods of time (col. 5, line 13-17; col. 9, lines 1-21), which are closely associated with thermal stability/insulation properties. Prior art teaches glycols in terms of prehydrating alcohol and as an alcohol solvent (col. 6, lines 21-61), a water-soluble or water-dispersible polymer within the scope of the present viscosifying polymer (col. 6, line 62 to col. 7, line 27), crosslinking agent (col. 5, lines 25-30; col. 8, lines 50-61; col. 13, Example 10, Table 6) and other conventional additives. Prior art teaches the inclusion of other polymers having rheological and/or thixotropic characteristic similar to those of the viscosifying polymers disclosed (col. 7, lines 21-27).

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US 6,581,701 to Heying discloses a method of reducing lost circulation in wellbores by incorporating a superabsorbent polymer in non-swollen state into an aqueous drilling fluid (abstract; col. 1, lines 19-31). Patentee prefers crosslinked polyamides as the water-absorbing polymer, but also teaches other suitable polymers, including starch-grafted polyacrylonitrile and crosslinked acrylamide/sodium acrylate copolymers (col. 3, lines 4-67; col. 4, lines 46-64; col. 5, lines 49-55; col. 7, lines 10-28, line 66 to col. 8, line 17). The inclusion of other lost circulation materials such as starch or cellulose materials is also suggested (col. 5, lines 9-17). Similarly, US 4,664,816 to Walker discloses the use of an encapsulated water absorbent polymer as a drilling fluid additive for reducing lost circulation in wellbores (abstract; col. 4, lines 5-12). Prior art discloses various superabsorbent polymers as suitable additive, inclusive of those expressed in the present claims (col. 5, line 1-69). Still further, US 4,836,940 to Alexander, similarly discloses a method and a composition for controlling lost circulation of drilling fluid in wellbores, prior art method comprises introducing a palletized composition containing a water absorbing polymer and bentonite into a

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drilling fluid (see abstract; col. 5, lines 29-45).

Suitable water absorbing polymers include those expressed in the present claims (col. 8, line 19 to col. 9, line 44).

Accordingly, in light of the clear teaching provided in US-701, US-816, and US-940, of using superabsorbent polymers as drilling fluid additive to control circulation loss in wellbores during drilling operations. It would have been obvious to one having ordinary skill in the art to incorporate the superabsorbent polymers as taught into the closely analogous viscosifying aqueous brine composition of Vollmer et al., motivated by the reasonable expectation of enhanced reduction in lost circulation of drilling fluid in wellbores as taught. Once the combination is suggested, the determination of optimum or workable ranges of each component involves only routine skill in the art. Regarding the "thermal insulating" expressed in the preamble of the present claims, the examiner is of the position that the recited thermal insulating properties are inherent in prior art composition because identical components are present in the respective compositions. In any event, enhanced thermal stability of the resultant composition is expected as stable rheological properties are improved. Furthermore, superabsorbent polymers, which serve to bridge or fill the

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cracks or interstices in the circulation zone, are expected to provide thermal stability to the drilling environment.

4. Claims 37-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Unger et al. (US-082) or Ishii et al. (US-651) or Nakashita et al. (US-336) for the reasons of record.

US 5,502,082 to Unger et al. discloses a crosslinked article having enhanced thermal insulating property, derived from a hydrogel polymer (abstract). Suitable hydrogel polymer taught includes natural (i.e. starch, gums) and synthetic polymer (i.e. starch graft copolymers) (col. 2, lines 11-36; col. 5, lines 12-51; Examples 4 and 8) and mixtures thereof, in an effective amount of 0.02% to 15% (col. 5, lines 55-65). Polyols are disclosed in terms of solvent additives and drying control chemical agents (col. 2, lines 55-61; col. 7, lines 3-11; col. 11, lines 58-61). Gelling agent disclosed within the scope of the instant crosslinking agent include boric acid/borate, chemical crosslinking agents, and polycationic species as expressed in the present claims (col. 5, line 66 to col. 6, line 51; col. 10, lines 15 to col. 11, line 24; working Examples). Accordingly, it would have been obvious to one skilled in the art to employ a mixture of hydrogel polymers, disclosed within the scope of the instant water-

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superabsorbent polymer and viscosifying polymer, motivated by the expectation of thermal insulation improvement as taught. The absorbency expressed in claims 2-5 is considered inherent property in prior art hydrogel composition in light of the identical material used. The burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. Once the suggestion of various ingredients is provided, one skilled in the art would have readily envisaged the optimum or workable ranges within prior art general conditions.

US 5,965,651 to Ishii et al. discloses a liquid-absorbing material composition having enhanced thermal stability (col. 20, lines 23-28). Prior art composition comprises a crosslinking agent, an N-vinylcarboxamide copolymer, water, water-soluble organic solvent and a plasticizer (col. 2, lines 26-54; col. 5, lines 29-43; col. 10, lines 36-49; col. 16, lines 15-25). Prior art further discloses natural and synthetic hydrophilic polymers within the scope of the instant superabsorbent polymer and viscosifying polymer (col. 16, lines 26-59; col. 21, lines 3-20; working Examples). Accordingly, it would have been obvious to one having ordinary skill in the art to use a

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mixture of natural and synthetic hydrophilic polymers as taught for the expected additive results in thermal insulation enhancement, in light of their having been disclosed as suitable hydrophilic polymer alternatives by patentees. Absent evidence of unusual or unexpected results, no patentability can be seen in using a mixture of hydrophilic polymers wherein each is used for the same purpose by the prior art. Once the suggestion of various components is provided, one skilled in the art would have readily envisaged the optimum or workable ranges within prior art general conditions. The absorbency of the superabsorbent polymer is considered inherent in the prior art as discussed above.

Similarly, US 5,077,336 to Nakashita et al. discloses an insulating composition comprising polyvinyl chloride, a plasticizer, a water-absorbing gel (abstract). Suitable water-absorbing polymer includes natural and synthetic polymer species (col. 2, lines 10-36; col. 3, lines 25-39) within the scope and function of the instant superabsorbent polymer and viscosifying polymer. Patentees teach using 0.1-5.5 parts by weight of the water-absorbing polymer based on 100 parts of water. Curing/crosslinking agents are disclosed within the scope of the instant crosslinking

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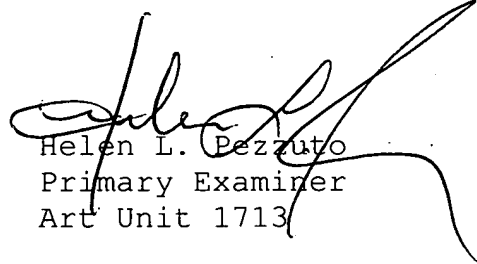
agents, and ethylene glycol or diethylene glycol are taught to be suitable co-solvent with water (col. 3, lines 47-62). Accordingly, it would have been obvious to one having ordinary skill in the art to use a mixture of natural and synthetic water-absorbing polymers as taught for the expected additive results in excellent heat-insulation properties, in light of their having been disclosed as suitable water-absorbing polymer alternatives by patentees. Absent evidence of unusual or unexpected results, no patentability can be seen in using a mixture of hydrophilic polymers wherein each is used for the same purpose by the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen L. Pezzuto whose telephone number is (571) 272-1108. The examiner can normally be reached on 8 AM to 4 PM, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Helen L. Pezzuto
Primary Examiner
Art Unit 1713

hlp